

Abstract

A method and a device suitable for implementing this method for etching a substrate (10), a silicon body in particular, 5 using an inductively coupled plasma (14) are proposed. For this purpose, a radio-frequency electromagnetic alternating field is generated with an ICP source (13), the alternating field generating an inductively coupled plasma (14) of reactive particles in a reactor (15). The inductively coupled 10 plasma (14) arises by the action of the radio-frequency electromagnetic alternating field on a reactive gas. Furthermore, a device is provided with which a plasma power injected into the inductively coupled plasma (14) via the radio-frequency electromagnetic alternating field with the ICP source (13) is capable of being pulsed so that at least from time to time a pulsed radio-frequency power can be injected into the inductively coupled plasma (14) as a pulsed radio-frequency power. In addition, the pulsed plasma power can be combined or correlated with a pulsed magnetic field and/or a pulsed substrate electrode power.

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Figure 1

Figure 3

Radio-frequency power (RF pulses)

Magnetic coil current (current pulses)

Time axis t